

CONTENTS

1. Jnet NETWORK IDENTIFICATION	2
2. TEMPERATURES	2
3. TEMPERATURE ALARMS	2
4. TEMPERATURE CONTROL	3
5. ELECTRONIC EXPANSION VALVE CONTROL	4
5.1 OPERATIONAL SUPERHEAT	4
5.2 Jnet NETWORK AUTOMATIC PRESSURE TRANSDUCER CALIBRATION	4
5.3 ELECTRONIC EXPANSION VALVE CONTROL DATA	5
5.4 ELECTRONIC EXPANSION VALVE OVERRIDE DATA	6
5.5 ELECTRONIC EXPANSION VALVE MODIFIER DATA	6
6. INPUTS & OUTPUTS	7
7. SUCTION PRESSURE OPTIMISATION	7
8. DEFROST CONTROL	8
8.1 DATA & STRATEGIES	8
8.2 REAL TIME INITIATED DEFROST TIMES	9
8.3 Jnet NETWORK INITIATED DEFROST	9
8.4 COORDINATED DEFROST INITIATION	10
8.5 JTL PREDICT DEFROST INITIATION	11
8.6 DEFROST TERMINATION	11
8.7 DEFROST FORCING FUNCTIONS	11
9. FAN CONTROL	12
10. Jnet COMMAND FUNCTIONS	12
11. DISPLAY FUNCTIONS	12
12. CLOCK CALENDAR	13
13. RESTORE FACTORY DEFAULTS	13
14. SYSTEM ALARMS	14
15. DIAGNOSTIC & TEST FUNCTIONS	15
DISPLAY DATA	17

JTL COLDSTORE CONTROLLER ITEM NUMBERS					LACI	
ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
				4321		
1. Jnet NETWORK IDENTIFICATION						
0	Unit type	LACI	Unit type			
19	Software Version number					
1	Unit number				0.1 - 899.8	
2. TEMPERATURES						
Note: The temperatures can be displayed on the maintenance unit in degrees Celsius or Fahrenheit. The choice is made on item 122. All setpoint ranges in this document are shown in celsius.						
20	Coldroom temperature					
21	Air on temperature					
36	Air on sensor selection	OFF AO.En	Disabled Enabled		0 - 1	AO.En
22	Air off temperature					
37	Air off sensor selection	OFF AF.En	Disabled Enabled		0 - 1	AF.En
23	Evaporator temperature					
38	Evaporator sensor selection	OFF EP.En	Disabled Enabled		0 - 1	EP.En
24	Suction line temperature					
39	Suction line sensor selection	OFF SP.En	Disabled Enabled		0 - 1	SP.En
25	Superheat (Evaporator temp - suction line temp)					
141	Termination sensor temperature					
147	Termination sensor selection	OFF tS.En			0 - 1	OFF
247	Site temperature (from broadcast)					
248	Site humidity (from broadcast)					
122	Temperature display unit choice	CELS FAhr	Celsius Fahrenheit		0 - 1	CELS
3. TEMPERATURE ALARMS						
127	High temperature alarm inhibited selection	OFF A.inh	Alarms enabled always Alarms inhibited during defrost		0 - 1	OFF
26	Average coldstore temperature error					
32	Coldstore overtemperature alarm tolerance	0.0	Disable Ht alarm	xxCC xxCO xxOC xxOO	0 - 20 0 - 20 0 - 20 0 - 20	10 10 5 10
47	Period over which averages are taken				00:30 - 03:00	02:00

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4. TEMPERATURE CONTROL						
67	Isolate coldroom	run ISOL	Normal operation Coldroom isolated		0 - 1	run
275	Control temperature (from v0.00.3 on) Note: upto v0.00.2 control is on air off	0 1	A.oFF Cr.t	Air off Coldroom	0 - 1	Cr.t
30	Coldstore temperature setpoint (target for item 21)			xxCC xxCO xxOC xxOO	- 30 to -12 - 30 to -12 - 5 to +25 - 5 to +25	- 20 - 26 0 +4
28	Current Air off temperature setpoint (calculated by controller)					
29	Current Evaporator temperature setpoint (calculated by controller)					
240	Liquid line valve open percentage for last sample period					
241	Average liquid line valve open percentage over data logging interval period					

JTL COLDSTORE CONTROLLER ITEM NUMBERS					LACI	
ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
				4321		
5. ELECTRONIC EXPANSION VALVE CONTROL						
Note: Pressures can be displayed on the maintenance unit in psi, bar or kPa. The choice is made on item 179. All setpoint ranges in this document are shown in psi. (Note: for electronic expansion valve (PEV) control, item 160 must be set on)						
5.1 OPERATIONAL SUPERHEAT						
161	Control strategy		2 temperature Pressure transducer		1 - 2	Pt1
156	Operational Superheat (determined by strategy set on item 161)	1 2	2t Pt1			
152	Suction line temperature					
151	Evaporator temperature					
155	Suction pressure (guage)					
158	Pressure transducer zero offset				-10.0 to +10.0	0.0
159	Auto zero pressure transducer offset					
175	Pressure transducer type (v0.00.1 on)	3 4	07 34	PTXV07 PTXV34	xxcc xxco xxoc	34 07 07
177	Pressure transducer calibration method Note: Auto zero adjustment is shown on item 159. Network zero adjustment is shown on item 206.	0 1 2	nonE A.Pt.O nEt.A	None Auto zero Network adjustment		nonE
178	Rate of fall of superheat to trigger auto zero sequence (°C/min)				1.0 - 10.00	3.0
179	Pressure display unit choice	0 1 2 3	nonE PSI bAr PASC	Not selectable (kPa) p.s.i. bar kPa		PSI
157	Refrigerant type	3 4 5 6 7 8 9	404A 407A 407b 507A 408A nH3 744	R404A R407A R407B R507A R408A Amonia (R717) R744 (CO2)	xxCx xxOx	744 407A
5.2 Jnet NETWORK AUTOMATIC PRESSURE TRANSDUCER CALIBRATION						
204	Unadjusted suction pressure					
205	Jnet network zero adjustment status	FroZ LivE	Adjustment frozen Adjustment live			
206	Jnet network zero adjustment					
207	Average suction pressure over last hour at evaporator (defrosts are discounted)					
208	Average suction pressure from plant via network					
209	Suction line pressure drop				xxCx xxOx	4.0 6.0
154	Force average pressure to current pressure	CLr F.Av.P	Off Force pressure			

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5.3 ELECTRONIC EXPANSION VALVE CONTROL DATA							
188	Superheat control strategy	up to v0.00.2					
		0	OFF	SUCCEEDS (Floating)		0 - 1	
		1	En.SL	Enable upper limit			
		from v0.00.3					
		0	Succ	SUCCEEDS (Floating)	xxCx	0 - 2	Succ
		1	Suc.L	Enable upper limit			
		2	F-SH	Fixed superheat	xxOx	0 - 2	F-SH
189	Superheat setpoint (for fixed and upper limit depending on item 188)	upto v0.00.4					
		6 - 12		8			
		from v0.00.5					
		4 - 12		6			
140	Temperature deadband (v0.00.3 on) Note: for use with fixed and limited superheat strategies				0.4 - 3.0	0.4	
168	Current opening % (PI x modifier) OR override						
172	PI output (before modification)						
277	Proportional output (v0.00.5 on)						
276	Integral output (v0.00.4)						
170	Valve control gain (proportional term)				1 - 100	20	
171	Valve control time constant (integral term)	0 1 - 250	Integral disabled Time constant		0 - 250	20	
162	Minimum Superheat for control strategy				0 - 10.0	6.0	
186	Minimum superheat for 2 temperature control			xxCx	0 - 5.0	4.0	
				xxOx	0 - 5.0	3.0	
163	Maximum Valve opening % (PI)				10 - 100	100	
164	Minimum Valve opening % (PI) for pressure control strategy				0 - 50	0	
187	Minimum valve opening % for 2 temperature control			xxCx	5 - 50	5	
				xxOx	5 - 50	10	
166	Forced valve opening %				0 - 100		
167	Force valve shut	OFF F.Sht	Off Forced shut		0 - 1		
169	Current valve status	OFF PE.on	Off On				
173	Maximum time at minimum output	00:00	Not used		00:00 - 00:10	00:05	
174	High suction pressure shutdown selection	OFF Hp.on	Disabled Enabled		0 - 1	HP.on	

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5.4 ELECTRONIC EXPANSION VALVE OVERRIDE DATA						
180	Superheat override status	OFF Or.on	Off Override on			
181	Time since last override (in hr:mn)					
182	Duration of last override (in secs)					
183	Duration of this override (in secs)					
184	Accumulated override time (in secs)					
185	Time since output last modified by override (in hr:mn)					
243	PREDICT override current average (%)					
5.5 ELECTRONIC EXPANSION VALVE MODIFIER DATA						
194	Average temperature error over past 5 mins					
190	Modifier value (%)					
191	Modifier error gain				1 - 100	20
192	Modifier error adjustment upper limit (%)				1 - 25	10
193	Time temperature above setpoint before modifier increased				00:01 - 00:20	00:02
195	Modifier increase time constant				1 - 100	10
196	Modifier integral term output					

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6. INPUTS & OUTPUTS						
70	Operating mode	rEFr dEFr dF.rc dr.dn Li.Ho Pu.dn Sh.dn	Refrigeration Defrost Defrost recovery Drain down Liquid hold off Pump down Shutdown			
273	Enable input IP1 to override PEV control	OFF En.PO	Off Enable PEV override		0 - 1	En.PO
274	PEV override input state (input 1)	OFF P.O.On	Off PEV override on			
139	Man trapped input state (input 2) (v0.00.8 on)	OFF trAP	No input Man trapped			
72	Defrost relay (function depends on item 75)	oFF dt.on dc.on	Relay deenergised Defrost termination on Defrost control on			274
74	Auxiliary heater and fan relays (RL1 & RL2)	oFF Fn.on Hr.on Both	Off Fans on Heater on Both on			
75	Defrost relay mode selection	d.tEr d.Con	Defrost termination Defrost control		0 - 1	d.con
7. SUCTION PRESSURE OPTIMISATION						
200	Disable suction pressure optimisation for this unit	En.SO di.SO	Enable Disable		0 - 1	En.SO
201	Exclude evaporator from suction pressure optimisation (Data to network)	OFF in.SO	Off Inhibit from suction optimisation			
203	Related suction line from plant controls (Data from network)	nonE Lt Ht SAt	Not selected Low temperature High temperature Satellite			
202	Raw network data for optimiser from plant (Binary data interpreted on item 203)					
211	Evaporator suction group - Required by Mark 2 optimisers (Data to network)	0 noneE 1 Lt 2 Ht 3 SAt	Not selected Low temperature High temperature Satellite		0 - 3	noneE
212	Operating mode	rEFr dEFr dF.rc dr.dn Li.Ho Pu.dn Sh.dn	Refrigeration Defrost Defrost recovery Frain down Liquid hold off Pump down Shutdown			
217	Plant data to network (binary value interpreted on item 211)					

JTL COLDSTORE CONTROLLER ITEM NUMBERS					LACI	
ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
				4321		
8.2 REAL TIME INITIATED DEFROST TIMES						
When a 12 hour schedule is selected (item 60) the defrosts repeat on a 12 hour cycle ie., if 08:00 is selected then a 2nd defrost occurs at 20:00 (and vice versa)						
Daylight saving operation. Time and defrost schedule can be automatically displayed as standard time or daylight saving (summer) time if desired. When daylight saving is operational the displayed schedule is automatically adjusted so that defrost still occur at the same "standard time".						
51	Defrost time 1	00:00 00:01 - 23:59	Defrost disabled Defrost enabled	xxCC xxCO xxOC xxOO	00:00 - 23:59 00:00 - 23:59 00:00 - 23:59 00:00 - 23:59	01:00 02:00 03:00 04:00
52	Defrost time 2	00:00 00:01 - 23:59	Defrost disabled Defrost enabled	xxCC xxCO xxOC xxOO	00:00 - 23:59 00:00 - 23:59 00:00 - 23:59 00:00 - 23:59	07:00 08:00 09:00 10:00
53	Defrost time 3	00:00 00:01 - 23:59	Defrost disabled Defrost enabled	xxCC xxCO xxOC xxOO	00:00 - 23:59 00:00 - 23:59 00:00 - 23:59 00:00 - 23:59	13:00 14:00 15:00 16:00
54	Defrost time 4	00:00 00:01 - 23:59	Defrost disabled Defrost enabled	xxCC xxCO xxOC xxOO	00:00 - 23:59 00:00 - 23:59 00:00 - 23:59 00:00 - 23:59	19:00 20:00 21:00 22:00
55	Defrost time 5	00:00 00:01 - 23:59	Defrost disabled Defrost enabled		00:00 - 23:59	00:00
56	Defrost time 6	00:00 00:01 - 23:59	Defrost disabled Defrost enabled		00:00 - 23:59	00:00
60	Defrost schedule selection	24 hr 12 hr	24 hour schedule 12 hour schedule		0 - 1	24 hr
43	Time next defrost is due					
8.3 Jnet NETWORK INITIATED DEFROST						
46 (215)	Jnet Network initiated defrost command status	P.dEF F.dEF nonE	Defrost Forced defrost No command			
261 to 272	Defrost schedule (12 times starting at item 261 through to 272)					

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ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
				4321		
8.4 COORDINATED DEFROST INITIATION This information is for use by defrost schedulers						
69	No of defrosts required per day (Note, when the defrost strategy is set to PREDICT operation, this item is not available. When the defrost strategy is set to coordinated defrost this item sets the number of defrosts a day that are required.)	0 1 - 12	Function disabled No of defrosts		0 - 12	3
224	Time since the start of last defrost					
216	Defrost requirement to defrost coordinator					
223	Defrost requirement priority				1 - 8	1
211	Evaporator suction group	0 1 2 3	nonE Lt Ht SAT	Not selected Low temperature High temperature Satellite		0 - 3 nonE
214 (414)	Defrost heater choice	0 1 2 3 4 5 6	rEd YELL bLuE 3 - Ph GAS.2 GAS.3 oFF.C	Electric red phase Electric yellow phase Electric blue phase Electric 3 phase 2 pipe gas 3 pipe gas Off cycle		0 - 6 rEd
213	Electric circuit choice (depends on item 214)	1 2 3 4 5 6 7	cct1 cct2 cct3 cct4 cct5 cct6 cct7	Circuit 1 Circuit 2 Circuit 3 Circuit 4 Circuit 5 Circuit 6 Circuit 7		1 - 7 1
215 (46)	Jnet network initiated defrost command status	P.dEF F.dEF nonE	Defrost Forced defrost No command			
217	Evaporator data to plant					
219	Jnet network defrost arrangement	nonE cord dEF.S PrEd	None Defrost co-ordinator present on network Timed defrost scheduler present on network Predict co-ordinator present on network			
220	Defrost coordinator status	oFF cord	No defrost coordinator Defrost coordinator present on network			

JTL COLDSTORE CONTROLLER ITEM NUMBERS					LACI		
ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE	
				4321			
8.5 JTL PREDICT DEFROST INITIATION							
225	Minimum time between defrosts (hours)				2 - 8	6	
226	Maximum time between defrosts (hours)				6 - 72	24	
242	PREDICT initiation override level (%)				0 - 100	25	
243	PREDICT override current average (%)						
8.6 DEFROST TERMINATION							
144 (413)	Termination method selection	1	EuAP	Evaporator sensor	xxCX	1 - 4	EuAP
		2	A.OFF	Air off sensor	xxOC		
		3	tEr	Termination sensor			
		4	tot	Time only	xxOO	1 - 4	tot
141	Termination sensor temperature						
147	Termination sensor selection	OFF ts.En	Disabled Enabled		0 - 1	OFF	
50	Defrost termination temperature (the sensor used is available on item 144)				xxCC xxCO xxOC xxOO	0 - 30 0 - 30 0 - 30 0 - 30	20 20 15 20
145	Minimum defrost duration (Defrost heater cycles on termination temperature (item 50) as required during this time)					00:00 - 00:30	00:10
57	Maximum defrost duration				xxCx	00:05 - 00:59	00:20
					xxOC xxOO	00:05 - 00:59 00:05 - 00:59	00:20 00:40
59	Drain down duration				xxCC xxCO xxOC xxOO	00:00 - 00:20 00:00 - 00:20 00:00 - 00:05 00:00 - 00:05	00:10 00:10 00:05 00:02
49	Liquid hold off duration (starts when drain down completed)					00:00 - 00:10	00:00
8.7 DEFROST FORCING FUNCTIONS							
Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged.							
77	Forced defrost (Note when item 412 is indicating Jnet network initiated defrost then forced defrost sends the command to the plant for action. It is NOT actioned locally)	OFF Fd.on	Off Forced defrost on			0 - 1	
78	Inhibit defrost	OFF no.dF	Off No defrosts			0 - 1	
79	Forced refrigeration	OFF Fr.on	Off Forced refrigeration			0 - 1	
222	Enable forced defrost requirement to defrost coordinator	oFF F.r.En	Disabled Enabled			0 - 1	0
221	Forced defrost requirement to defrost coordinator (requires item 222 set to 1)	0 - 63	Forced value				

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ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
				4321		
9. FAN CONTROL						
108	Fan control	F.on F.oFF	Fan runs always Fan off during defrost		1 - 2	F.oFF
109	Fan delay after defrost	00:00	Use evap temp		00:00 - 01:00	00:00
10. Jnet COMMAND FUNCTIONS						
62	Jnet network controlled shutdown selection	oFF Sh.dn	Disabled Enabled		0 - 1	oFF
63	Jnet network command for shutdown	nonE Sh.dn	No command Shutdown			
133	Enable plant to override temperature control and run refrigeration regardless of the temperature setpoint	Off nrc.E	Disabled Enabled		0 - 1	Off
134	Enable Jnet network command to cut off refrigeration in event of plant fault	Off PFC.E	Disabled Enabled		0 - 1	Off
135	Display Jnet network commands	nonE O.S.df PL.Ft P.C.Ft	No command Other associated systems on defrost Plant fault Plant comms fault			
11. DISPLAY FUNCTIONS						
122	Temperature display unit choice	CELS FAhr	Celsius Fahrenheit		0 - 1	CELS
121	Display pushbutton status	Pb- - Pb1 - Pb- 2 Pb12	OFF Button 1 pressed Button 2 pressed Both buttons pressed			

JTL COLDSTORE CONTROLLER ITEM NUMBERS					LACI	
ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
				4321		
12. CLOCK CALENDAR						
Note The time and date can be displayed as standard or daylight saving (summer) time. This choice is made on item 18. When daylight saving is chosen and the controller is connected to a JTL Network Controller supporting daylight saving operation, the change is made automatically to the current EU directive.						
2	Time of day				00:00 - 23:59	
3	Day of week	Sun - Sat	0 = Sunday 1 = Monday etc			
4	Date				01:01 - 31:12	
5	Year				2004 - 2034	
18	Daylight saving enable	Stnd dAY.S	Standard time Daylight saving time		0 - 1	Stnd
13. RESTORE FACTORY DEFAULTS						
To set the factory defaults into the memory of the controller, first set the bitswitches as shown, then set item 9 to the set default value of "1234". This should be done on initial commissioning of the unit or when the unit is being installed as a replacement part.						
9	Set default values selected by Bitswitch Note: Setting the bitswitches alone has no effect.	1234	Set default values	xxCC xxCO xxOC xxOO	Frozen food Ice cream Chiller Produce (off cycle)	
		1066	Write to NVRAM without delay			
<p>where C = CLOSED or ON O = OPEN or OFF x = Don't care</p> <p>For unmarked switches C = dot visible O = dot not visible</p>						

JTL COLDSTORE CONTROLLER ITEM NUMBERS					LACI	
ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
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14. SYSTEM ALARMS						
80	Group alarm 81 - 88	0 1 - 255	No alarms Check 81 - 88			
81	Coldroom overtemperature	CLr C.Ht	No fault Fault			
83	Air on sensor fault	CLr AO.Pr	No fault Fault			
84	Air off sensor fault	CLr AF.Pr	No fault Fault			
85	Sensor power supply fault	CLr PS.Ft	No fault Fault			
87	Shutdown alarm	CLr Sh.dn	No fault Fault			
88	All sensors faulty, deselected or disconnected	CLr t.SEn	No fault Fault			
90	Group alarm 91 - 98	0 1 - 255	No alarms Check 91 - 98			
91	Termination sensor fault	CLr dt.Pr	No fault Fault			
92	Evaporator sensor fault	CLr EP.Pr	No fault Fault			
93	Suction line sensor fault	CLr SL.Pr	No fault Fault			
94	Expected defrosts have not been detected <small>(Note, This alarm normally depends on the setting in item 69. When the defrost initiation strategy is set to PREDICT the alarm occurs 3 hours after the defrost requirement has been set when no defrost has occurred).</small>	CLr dEF.F	No fault Fault			
95	Plant alarm (v0.00.8 on)	CLr AL.iP	No fault Fault			
97	Excessive Superheat fault	CLr Hi.Sh	No fault Fault			
98	Pressure Transducer fault	CLr Pt.FL	No fault Fault			
250	Group alarms 251 - 258	0 1 - 255	No alarms Check 251 - 258			
251	Forced defrost activated	CLr F.dEF	No fault Forced defrost			
252	Network communications failure	CLr FAIL	No fault Comms failure			
257	Man trapped (v0.00..8 on)	CLr trAP	No fault Man trapped			
258	Backup defrost strategy in operation	CLr d.bAc	No fault Backup defrost			

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ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
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15. DIAGNOSTIC & TEST FUNCTIONS						
44	Power off duration					
6	Communications speed (in kilo baud)	4.8	Baud rate			
7	Communications (Half duplex)	HALF	2 wire			
973	Latest polling interval This time shows the polling interval between the last two successful network awake messages to this unit.	min:sec				
974	Time since last awake message	min:sec				
975	Network receive timer Each time a message is read correctly the timer is set to 10 it counts down. If the timer reaches 0 then the communications module is reset.	seconds	(counts down to 0)			
976	Network receive bad character counter The counter counts down from a preset number. When the counter reaches 0 the communications module is reset.		(counts down to 0)			
977	Transmit control line status for the operation of the Jnet network communications.	Hi Lo	Transmit Receive			
8	Bitswitch setting	0 1 2 3	Frozen food Ice cream Chiller Produce (off cycle)	xxCC xxCO xxOC xxOO		
89	Sensor excitation value (Factory test)		Not used			
99	Test digital display	Clr SEt	Not active Test active		0 - 1	
100	Test inputs	iP - - iP1 - iP - 2 iP12	No inputs Input 1 on Input 2 on Both inputs on			
101	Test output relays	Clr SEt	Not active Test active		0 - 1	
121	Display pushbutton status	Pb- - Pb1 - Pb- 2 Pb12	OFF Button 1 pressed Button 2 pressed Both buttons pressed			
421	Temperature sensor 1 reading					
422	Temperature sensor 2 reading					
423	Temperature sensor 3 reading					
424	Temperature sensor 4 reading					
425	Temperature sensor 5 reading					
204	Unadjusted suction pressure					

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ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
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10	Processor alarms (11 - 17)	0 1 - 255	No alarms Check 11 - 17			
11	Static RAM fault	CLr rA.Ft	No fault Fault			
12	Program/counter fault	CLr PC.Ft	No fault Fault			
13	Stack pointer fault	CLr SP.Ft	No fault Fault			
14	Background loop fault	CLr bL.Ft	No fault Fault			
15	PROM checksum fault	CLr Pr.Ft	No fault Fault			
16	NVRAM fault	CLr n.Ft	No fault Fault			
17	Instruction TRAP fault	CLr tP.Ft	No fault Fault			

DISPLAY DATA		LACI
NORMAL DISPLAY		
- 99 ^c	Coldroom temperature (item 20 rounded)	
dEF	Defrost	
dEFr	Defrost recovery	
OFF	Shutdown	
FAnS	Fans only	
--	Display data error	
JTL	Start-up text	
ALARM TEXT (in descending priority order)		
t.SEn	All sensors faulty, deselected or disconnected	
Ht	High Coldroom temperature	
trAP	Man trapped in	
AL.IP	Plant fault input	
ISOL	Unit shutdown	